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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,931	10/11/2001	Clifford L. Hersh	PA1951US	2047
22830	7590	01/11/2008	EXAMINER	
CARR & FERRELL LLP			BULLOCK JR, LEWIS ALEXANDER	
2200 GENG ROAD			ART UNIT	
PALO ALTO, CA 94303			PAPER NUMBER	
			2195	
			MAIL DATE	
			DELIVERY MODE	
			01/11/2008	
			PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/976,931

Applicant(s)

HERSH, CLIFFORD L.

Examiner

Lewis A. Bullock, Jr.

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10, 13 and 15-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 15-28 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-7 and 13 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/ are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by "A Generalization of AVL Trees" by FOSTER.

As to claims 1 and 3, FOSTER teaches a method of reducing the number of times a tree data structure is rebalanced comprising the steps of: allowing a sub-tree of the tree data structure to grow until a number of unbalanced levels reaches a threshold greater than one; and rebalancing the tree data structure when the threshold is reached (pg. 513, abstract, "A generalization of AVL trees is proposed in which imbalances up to Δ are permitted, where Δ is a small integer; pg. 513, The Construction of an AVL Tree," "...we reach an ancestor whose longer sub-tree was lengthened by the addition of the new node and whose longer sub-tree now exceeds its shorter sub-tree by more than the permissible amount (Δ). Here we must rebalance the tree. It is interesting to note that exactly the same mechanism of restructure that works for standard AVL trees also applies for larger Δ 's.."). It is inherent that since rebalances are not performed until Δ is exceeded and therefor imbalances are to continue, that Δ is set to a number greater than a level of a balance.

As to claims 5 and 7, refer to claims 1 and 3 for rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2, 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over "A Generalization of AVL Trees" by FOSTER.

As to claims 2, FOSTER teaches allowing imbalances until a Δ is exceeded wherein Δ is small or large integers (pg. 513). Official Notice is taken in that it is well known in the art that log n values are also integer values and there an obvious design choice for a user to set Δ to a log value which is an integer value.

As to claim 6, refer to claim 2 for rejection.

As to claim 13, reference is made to a system that corresponds to the method of claim 1 and is therefore met by the rejection of claim 1 above. Claim 13 further details the system comprising memory and a processor. Official Notice is taken in that a search tree is stored in memory and execution on a search tree are performed by a processor such that additions are performed to the tree to allow it to grow imbalanced. It would be obvious that the imbalances taught by FOSTER are performed on a

computer system storing the tree and that the imbalances are allowed to continue until Δ is exceeded wherein rebalancing is performed.

Allowable Subject Matter

3. Claims 10, 15, 17-21, 22-28 are allowed.
4. Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments with respect to claims 1-7, 10, 13 and 15-28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (571) 272-3759. The examiner can normally be reached on Monday-Friday, 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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January 5, 2008

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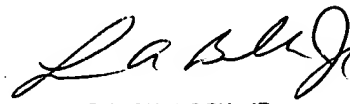
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January 5, 2008


LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER